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ZOOLOGY.—*A key to the subspecies of Leptopoma nitidum Sowerby of the Philippine Islands.* PAUL BARTSCH,¹ U. S. National Museum.

In the preparation of the monograph on the Philippine operculate land shells, so many interesting and important facts are presenting themselves that it is deemed wise to publish a synopsis of the various groups and superspecies from time to time, with the hope that these synopses and keys may stimulate collectors to look for material in localities which so far have remained unworked, in order that the final monograph may give us a more complete résumé of the members constituting the Philippine Island faunas. It is for this purpose that the present synopsis and key to the Philippine land shells of the *Leptopoma nitidum* complex have been prepared.

Leptopoma nitidum

Shell polished, shining, white, excepting the tip, which, in some of the subspecies, is dark. The earliest part of the nepionic turns are smooth, while the succeeding portion is marked by slender, equal and equally or sub-equally spaced spiral threads which vary in number from five to eight in the different subspecies. These spiral striations terminate with the nepionic whorls in some of the subspecies, while in others they extend for almost two turns beyond it. The nepionic whorls are also marked by strong incremental lines which frequently give the summit of the turns a slightly crenulated appearance. Post-nepionic whorls strongly inflated, rounded, marked by incremental lines and spiral striations which vary in strength and closeness of spacing in the different subspecies. Suture strongly constricted. Periph-

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ery varying from well rounded to feebly, obsoletely angled in the various subspecies. Base umbilicated, well rounded, usually sculptured like the upper portion of the last whorl. Aperture subcircular; outer lip reflected and expanded; inner lip strongly curved and decidedly excavated; parietal wall narrow, covered with a thin callus. Operculum membranaceous.

The size of the shell varies from the huge *Leptopoma nitidum guimarasensis* from Guimaras Island, to the small *Leptopoma nitidum ancilis* from Cebu.

The character of the incised spiral sculpture, particularly that of the last whorl, enables one to separate this complex into three distinct groups. In the first of these, the incised lines are deep and rather distantly spaced. This group embraces, *L. n. siquijorensis* from Siquijor Island, *L. n. guimarasensis* from Guimaras Island, and *L. n. darajuayensis* from Darajuay Island.

The second group has the incised spiral sculpture of the same strength as in the first group, but the striations are more closely placed and these, in connection with the lines of growth, are so arranged as to give the surface of the last whorl the appearance of a cloth-like texture. There are seven subspecies belonging to this group, *L. n. atropos* from Polillo Island, *L. n. cebuensis*, from Cebu Island, *L. n. butauananensis* from Butauanan Island, *L. n. basiaoensis* from Basiao Island, *L. n. maculaboensis* from Maculabo Island, *L. n. leytenensis*, from Leyte, and *L. n. nitidum* from northern Luzon. Of these, the first three have an obsolete spiral thread at the periphery while the last four have this portion of the shell evenly rounded. It is interesting to note that in some of these forms the spiral lirations characteristic of the nepionic whorls of all the members of the *nitidum* group, extend beyond the nepionic portion of the shell.

In the third and last group, the spiral sculpture is feeble and consists of feebly incised, wavy lines. This group embraces five subspecies. *L. n. romblonensis* from Romblon Island, *L. n. panayensis* from Panay Island, *L. n. anaitis* from Cebu, *L. n. unionensis* from Luzon, and *L. n. artemisia* from the small island of Panay, of the Catanduanes Group, off Eastern Luzon.

Key to the subspecies of *Leptopoma nitidum* Sowerby

Spiral sculpture consisting of strong, deeply incised lines.

Spiral striations distantly spaced on the last whorl.

Nepionic whorls brown..... 1. *siquijorensis*

Nepionic whorls white.

TABLE 1
TYPE LOCALITY, DISPOSITION, AND MEASUREMENTS OF TYPES

NAME	CATALOG NUMBER	COLLECTION	NUMBER OF WHORLS	ALTRITUDE	GREATER DIAMETER	LESSER DIAMETER	LOCALITY	REMARKS
1. <i>L. n. siquijorensis</i>	130858	U. S. Nat. Mus.	5.8	16.7	18.7	13.9	Siquijor	Type
2. <i>L. n. guimarasensis</i>	195684	U. S. Nat. Mus.	6.2	20.6	20.4	14.5	Guimaras	Type
3. <i>L. n. darajuyensis</i>	257033	U. S. Nat. Mus.	5.8	17.9	16.7	12.8	Darajuy	Type
4. <i>L. n. sauarensis</i>	257051	U. S. Nat. Mus.	5.7	16.8	16.3	12.0	Catbalogau	Type
5. <i>L. n. atropos</i>	219029	U. S. Nat. Mus.	6.0	18.7	17.4	12.3	Polillo	Type
6. <i>L. n. cebuensis</i>	219028	U. S. Nat. Mus.	5.9	17.9	16.8	12.5	Toledo, Cebu	Type
7. <i>L. n. butaananensis</i>	257108	U. S. Nat. Mus.	5.7	16.8	16.3	12.0	Butaanan	Type
8. <i>L. n. basiaoensis</i>	257050	U. S. Nat. Mus.	5.6	13.8	13.8	10.1	Middle Basio	Type
9. <i>L. n. maculaboensis</i>	257138	U. S. Nat. Mus.	6.0	18.2	17.0	13.2	Maculabo	Type
10. <i>L. n. leytenis</i>		Chic. Acad. Sci.	5.6	15.9	15.9	11.8	Taclaban	Type
11. <i>L. n. nitidum</i>	104814	U. S. Nat. Mus.	5.5	14.1	14.0	10.4	Tabanatuan Nueva Vizeaya, Luzon	Cotype
12. <i>L. n. romblonensis</i>	216900	U. S. Nat. Mus.	6.0	15.8	15.8	11.7	Romblou	Type
13. <i>L. n. panayensis</i>	219027	U. S. Nat. Mus.	5.5	20.0	18.7	13.8	Igbara, Panay	Type
14. <i>L. n. anattis</i>		Chic. Acad. Sci.	5.5	14.1	12.2	9.9	Aloguinsan, Cebu	Type
15. <i>L. n. unionensis</i>	257045	U. S. Nat. Mus.	5.8	18.0	17.7	13.2	La Union, Luzon	Type
16. <i>L. n. artemisia</i>	219026	U. S. Nat. Mus.	5.8	15.5	14.5	11.2	Panay Id., Catanduanes	Type